

Forest Carnivore Conservation and Management in the Interior Columbia Basin: Issues and Environmental Correlates

Gary W. Witmer, Sandra K. Martin, and Rodney D. Sayler

## Interior Columbia Basin Ecosytem Management Project: Scientific Assessment

Thomas M. Quigley, Editor

U.S. Department of Agriculture Forest Service Pacific Northwest Research Station Portland, Oregon General Technical Report PNW-GTR-420 July 1998

## **Abstract**

Witmer, Gary W.; Martin, Sandra K.; Sayler, Rodney D. 1998. Forest carnivore conservation and management in the interior Columbia basin: issues and environmental correlates. Gen. Tech. Rep. PNW-GTR-420. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 51 p. (Quigley, Thomas M., ed.; Interior Columbia Basin Ecosystem Management Project: scientific assessment).

Forest carnivores in the Pacific Northwest include 11 medium to large-sized mammalian species of canids, felids, mustelids, and ursids. These carnivores have widely differing status in the region, with some harvested in regulated furbearer seasons, some taken for depredations, and some protected because of rarity. Most large carnivores have declined in numbers or range from human encroachment, loss or modification of forest habitat, accidental deaths (e.g., mortality from vehicles), illegal kills, and our inability to adequately monitor and protect populations. Efforts to reverse these trends include new approaches to reduce conflicts with humans, research to better define habitat needs, formation of expert carnivore working groups, and use of Geographic Information System models to predict specific impacts of habitat modifications. Long-term preservation of large carnivores in the region is problematic unless we reduce forest fragmentation and conflicts with humans and improve our ability to quantitatively integrate population dynamics with landscape level habitat requirements.

Keywords: Coyote, gray wolf, bobcat, lynx, mountain lion, fisher, marten, river otter, wolverine, grizzly bear, black bear, conservation, management, carnivores, late successional forest, wilderness, roads, disturbance, fragmentation, conservation biology, geographic information systems, forest management, animal damage.

## **Contents**

- 1 Introduction
- 2 Coyote (Canis latrans)
- 4 Gray Wolf (Canis lupus)
- 6 Bobcat (Lynx rufus)
- 8 Lynx (Lynx canadensis)
- 10 Mountain Lion (Felis concolor)
- 13 Fisher (Martes pennanti)
- 15 American Marten (Martes americana)

71 W # 1 144

- 18 River Otter (Lutra canadensis)
- 19 Wolverine (Gulo gulo)
- 22 Black Bear (Ursus americanus)
- 24 Grizzly Bear (Ursus arctos)
- 27 Conclusions
- 31 Acknowledgments
- 31 English Equivalents
- 32 Literature Cited
- 42 Appendix A
- 48 Appendix B
- 49 Appendix C
- 51 Appendix D